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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/582,215
Filing Date: June 08, 2006
Appellant(s): GREINER ET AL.

Robert A. Madsen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/25/2010 appealing from the Office action mailed 4/19/10.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 9, 12, 16-17, 19, and 21-22 are pending and are rejected.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The 35 USC 112, 2nd paragraph rejection of claim 14. It is noted that claim 14 was cancelled with the limitation imported in to claim 9.

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

20030153223	Matsumoto et al.	12-2002
4960642	Kosuga et al.	10-1990
JP 09-241420	Nakazawa	9-1997

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 9, 12, 16-17, 19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. (***US 20030153223***) in view of Nakazawa (***JP 09-241420***) and Kosuga et al. (***US 4960642***).

Matsumoto et al. disclose a plastic electrical conductive material. Concerning claims 9, 16, and 19, it is noted that the electrical conductive material is comprised of a certain amount of conductive material and thermoplastic matrix material wherein the conductive material forms a three-dimensional metal net structure (***para. 0056-0060***). The conductive material is comprised of fiber or particulate filler such as copper as well as a low melting point alloy wherein the rate of mixture of the filler and matrix resin is controlled to reduce volume resistance (***para. 0060-0062***). The amount of total filler is found to be from 50 wt% to 95 wt% as compared to the total composition (***para. 0063; Embodiment 1***). Regarding the total filler, it is noted that a combination of a low melting point metal (i.e. tin-based materials) and a high melting point metal (i.e. copper materials) can be included together within the filler composition and as such, meets the instant limitations. The resultant composition is then molded into a desired shape such

as a case body and the like and has a volume resistance of less than 10^{-4} Ω-cm, which would meet the limitations of claims 12, 17, and 22 (***para. 0077; para. 0055+***). However, Matsumoto et al. are silent to the components of the presently claimed low melting point metal compound, amount of copper fiber, and characteristics and dimensions of said fiber.

Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has a melting temperature of about 117°C to about 280°C (***abstract; para. 0016-0017***). The use of copper fibers in combination with the metal compound alloy has longer lasting conductivity and is environmentally friendly (***para. 0008***). Given that Matsumoto et al. disclose controlling the rate of mixture between the filler and matrix material affects the volume resistance and Nakazawa discloses the combination of the low melting point metal in combination with copper fibers has longer lasting conductivity as well as being environmentally friendly, it would have been obvious to one of ordinary skill in the art to use the low melting point compound of Nakazawa as the low melting point alloy of Matsumoto and to adjust the resin content to the desired filler.

Kosuga et al. disclose conductive fibers dispersed within a thermoplastic resin to form pellets in order to form various bodies. Concerning the dimensions and composition of the conductive fiber, it is noted that the fibers are comprised of copper or stainless steel and the like (***col. 2, lines 25+***) and have a thickness between 4 to 100 microns and a length from about 3 to 10 mm in length (***cols. 3-4, lines 61+***). The

thickness is as such that if the thickness is less than 4 microns, mechanical properties are very low and thus no shield effect and if they are 100 microns, there is no effective conductive path (***cols. 3-4, lines 61+***). Regarding the length of the fibers, it is noted that if the length of the fibers are less than 3 mm, no practical EM shielding is obtained due to an increase in resistance and greater than 10 mm; the resultant product has fiber balls (***col. 4, lines 12+***). Given that Matsumoto and Nakazawa disclose the use copper fibers and Kosuga et al. disclose the sizes of the conductive fibers needed for optimal shielding and conductivity, it would have been obvious to one of ordinary skill in the art to use the fibers of Kosuga in an amount as disclosed by Nakazawa within the composition of Matsumoto in combination with the low melting point alloy of Kosuga to yield the network structure as shown by Matsumoto and provide longer lasting conductivity.

All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Matsumoto et al. disclose a plastic electrical conductive material. However, Matsumoto et al. are silent to the components of the presently claimed low melting point metal compound, amount of copper fiber, and characteristics of said fiber. Nakazawa discloses a composition comprising a thermoplastic resin, an electroconductive fiber such as a copper fiber at a weight from 1-50 wt% and a metal compound alloy consisting of tin, bismuth, and zinc wherein such a compound alloy has a melting temperature of about 117°C to about 280°C. Given that Matsumoto et al. disclose controlling the rate of mixture between the filler and matrix material affects the volume resistance and Nakazawa discloses the

combination of the low melting point metal in combination with copper fibers has longer lasting conductivity as well as being environmentally friendly, it would have been obvious to one of ordinary skill in the art to use the low melting point compound of Nakazawa as the low melting point alloy of Matsumoto and to adjust the resin content to the desired filler in order to obtain the desired conductivity and resistivity profiles. Kosuga et al. disclose conductive fibers dispersed within a thermoplastic resin to form pellets in order to form various bodies. Concerning the dimensions and composition of the conductive fiber, it is noted that the fibers are comprised of copper or stainless steel and the like and have a thickness between 4 to 100 microns and a length from about 3 to 10 mm in length. Given that Matsumoto and Nakazawa disclose the use copper fibers and Kosuga et al. disclose the sizes of the conductive fibers needed for optimal shielding and conductivity, it would have been obvious to one of ordinary skill in the art to use the fibers of Kosuga in an amount as disclosed by Nakazawa within the composition of Matsumoto in combination with the low melting point alloy of Kosuga to yield the network structure as shown by Matsumoto and provide longer lasting conductivity.

(10) Response to Argument

Appellant asserts that claim 14 is not presently indefinite. Examiner acknowledges the cancellation of claim 14 and amending the claim to be definite. As such, the rejection of claim 14 under 35 USC 112, 2nd paragraph has been withdrawn.

a. **Rejections under Matsumoto in view of Nakazawa and further in view of Kosuga**

b. Appellant asserts that Matsumoto is silent to the fibers present jointly with a metal compound to form a fiber network and teaches away from using fibers. Concerning Appellant's assertion regarding the fibers present with a metal compound, Examiner notes that Matsumoto discloses "forming a three dimensional metal net structure in the filler" wherein the filler can be a metallic fiber and a low melting point alloy can be used either alone or as implied, in combination with the metal filler (***para. 0023-0026***). Examiner also notes that Matsumoto explicitly recites that "[T]he filler should preferably be capable of being dispersed in the matrix resin and should possess a net structure mutually electrically connected within the resin, such as a powder or fiber". Examiner respectfully disagrees that Matsumoto teaches away and notes that the present claims are silent to any processing including injection molding. Further, "non-preferred disclosures can be used. A non-preferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims." In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA

1960). Appellant further asserts that Matsumoto is silent to a copper fiber. While it is noted that Matsumoto does not explicitly recite a copper fiber, it is noted that a metal filler which can be a fiber or particle having a high melting point which can be a single metal, which in this case can be copper (***para. 0023-0026, 0059-0061***). Therefore, contrary to Appellant's argument, the only mention of copper fibers is not only in the comparative examples but within the inventive disclosure itself.

c. Concerning the Nakazawa reference, Appellant asserts that Matsumoto and Nakazawa are silent to the fibers and low melting point metal compound being greater than or equal to 60%. Examiner respectfully disagrees and notes that Matsumoto explicitly recites that the total filler with respect to the total composition is from 50 wt% to 95 wt% (***para. 0063***) and further, it is noted that Embodiment 1 shown the same. While it is noted that Nakazawa discloses a thermoplastic range that is larger than that presently claimed, it is noted that Nakazawa teaches the amount of fiber filler in conjunction with the low melting point alloy wherein the low melting point alloy of Matsumoto can be substituted with that of Nakazawa at the amount shown by Matsumoto and one of ordinary skill in the art would reasonably expect success.

d. Regarding the Kosuga reference, Appellant asserts Kosuga is silent to the presently claimed fiber length. While it is noted that Kosuga discloses a pellet having a specific length, it is also noted that the length of said pellets effect the shielding properties. Given that it has been established that the dimensions of

the fibers (i.e. the diameter) and further the resulting pellet effect the shielding properties, Examiner takes the position that the fibers must be within a range of 3 to 10 mm in order to exhibit the desired shielding and conductive properties. Appellant also asserts that Kosuga teaches away from the claimed invention. It is noted that Appellant is arguing the secondary references individually as opposed to the combination. Examiner further notes that Kosuga clearly establishes that pellets containing fibers of a length from 3 to 10 mm are desired in order to have the desired shielding and conductive properties. Concerning Appellant's assertion of Kosuga teaching a "bundle of fibers", it is noted that the bundle is cut into pellets that can be further molded wherein the resultant "bundle of fibers" pellet is molded into sheets (***Controls 1-6; col. 6, lines 25+***). The "bundle of fibers" would therefore result in a uniform dispersion after molding. Furthermore, it is noted that the "thermoplastic resin" as assumed by Appellant is actually a coating for the fibers prior to forming the sheet.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/PRASHANT J KHATRI/

Examiner, Art Unit 1783

Conferees:

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1787

/Christopher A. Fiorilla/

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